Assessments of the effectiveness of stormwater best management practices (BMPs) have focused on measurement of load or concentration reductions, which can be translated to predict biological impacts based on chemical water quality criteria. However, many of the impacts of development are related to alteration of habitat - channel morphometry, substrate, flow, and thermal regime. The purpose of this project is to assess the effectiveness of stormwater BMPs on water quality, flow, thermal regime, substrate integrity, and biological condition in the Delaware River Basin (DRB).

Historic habitat, temperature, flow, periphyton, macroinvertebrate, and fish community data were compiled from existing sources of monitoring data, along with locations of stormwater BMPs. Urbanization-response models and thresholds are being constructed along urban to rural watershed development gradients, using monitoring data and watershed attributes. Expected condition will be compared to actual condition in small watersheds with implemented stormwater BMPs, to determine the extent to which green infrastructure reduces stormwater impacts to biological assemblages and habitat variables in streams. Enhancement of biological condition by green infrastructure will be evaluated, providing useful information for restoration, development, re-development, and conservation management decisions. This poster presentation will focus on data collection methodologies, data analysis, and preliminary results in the DRB.